

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A dual-stack optical data storage medium ~~(10)~~ for write-once recording using a focused radiation beam ~~(9)~~ having a wavelength  $\lambda$  and entering through an entrance face ~~(8)~~ of the medium ~~(10)~~ during recording, comprising:

[[~~-~~]] at least one substrate ~~(1, 7)~~ with present on a side thereof:

[[~~-~~]] a first recording stack ~~(2)~~ named  ~~$L_0$~~ ,  ~~$L_0$~~  comprising a write-once type  ~~$L_0$~~ -first recording layer ~~(3)~~ having a complex refractive index  $\tilde{n}_{L0} = n_{L0} - i.k_{L0}$  and having a thickness  $d_{L0}$ , said first recording stack  $L_0$  having an optical reflection value  $R_{L0}$  and an optical transmission value  $T_{L0}$ ,

[[~~-~~]] a second recording stack ~~(5)~~ named  ~~$L_1$~~  comprising a write-once type  ~~$L_1$~~ -second recording layer ~~(6)~~ having a complex refractive index  $\tilde{n}_{L1} = n_{L1} - i.k_{L1}$  and having a thickness  $d_{L1}$ , said

second recording stack  $L_1$  having an optical reflection value  $R_{L1}$ ,

all parameters being defined at the wavelength  $\lambda$ ,

said first recording stack being present at a position closer to the entrance face than the second recording stack,

~~[[ - ]]~~ a transparent spacer layer ~~(4)~~ sandwiched between the recording stacks ~~(2, 5)~~, said transparent spacer layer ~~(4)~~ having a thickness substantially larger than the depth of focus of the focused radiation beam ~~(9)~~,

~~characterized in that wherein~~  $0.45 \leq T_{L0} \leq 0.75$  and  $0.40 \leq R_{L1} \leq 0.80$  and  $k_{L0} < 0.3$  and  $k_{L1} < 0.3$ .

2. (Currently Amended) A dual-stack optical data storage medium as claimed in claim 1, wherein  $\lambda$  is approximately 655 nm.

3. (Currently Amended) ~~A~~ The dual-stack optical data storage medium as claimed in claim 1 ~~or 2~~, wherein for the write-once  $L_a$  first recording layer the following conditions are fulfilled  $n_{L0} \geq 2.5$  and  $d_{L0}$  is in the range of  $\lambda/8n_{L0} \leq d_{L0} \leq 3\lambda/8n_{L0}$  or  $5\lambda/8n_{L0} \leq d_{L0} \leq 7\lambda/8n_{L0}$ .

4. (Currently Amended) ~~A~~ The dual-stack optical data storage

medium as claimed in claim 1 ~~or 2~~, wherein a first metal reflective layer, having a thickness  $d_{M1} \leq 25$  nm, is present between the write-once  $L_0$ -first recording layer and the transparent spacer layer and  $d_{L0}$  is in the range of  $\lambda/8n_{L0} \leq d_{L0} \leq 5\lambda/8n_{L0}$ .

5. (Currently Amended) A The dual-stack optical data storage medium as claimed in claim 4, wherein a ~~first~~ transparent auxiliary layer I1, having a refractive index  $n_{I1} \geq 1.8$  and having a thickness  $d_{I1} \leq \lambda/2n_{I1}$ , is present between the first metal reflective layer and the transparent spacer layer.

6. (Currently Amended) A The dual-stack optical data storage medium as claimed in claim 5, wherein  $d_{I1} \leq \lambda/4n_{I1}$ .

7. (Currently Amended) A The dual-stack optical data storage medium as claimed in ~~claim 1 or 2~~ claim 1, wherein a ~~second~~ transparent auxiliary layer I2, having a refractive index  $n_{I2}$  and having a thickness  $d_{I2}$  in the range of  $0 < d_{I2} \leq 3\lambda/8n_{I2}$ , is present at a side of the write-once  $L_0$ -first recording layer and  $d_{L0}$  is in the

range of  $\lambda/8n_{L_0} \leq d_{L_0} \leq 3\lambda/8n_{L_0}$  or  $5\lambda/8n_{L_0} \leq d_{L_0} \leq 7\lambda/8n_{L_0}$ .

8. (Currently Amended) A The dual-stack optical data storage medium as claimed in claim 7, wherein the ~~second transparent auxiliary layer (12)~~ is present at a side of the write-once  $L_0$  first recording layer (6) most remote from the entrance face ~~(8)~~ and  $n_{12} \leq n_{L_0}/1.572$ .

9. (Currently Amended) A The dual-stack optical data storage medium as claimed in claim 7, wherein the ~~second transparent auxiliary layer (12)~~ is present at a side of the write-once  $L_0$  first recording layer (6) closest to the entrance face and  $n_{12} \geq n_{L_0}/0.636$ .

10. (Currently Amended) A The dual-stack optical data storage medium as claimed in ~~any one of the preceding claims~~ claim 4, wherein a second metal reflective layer ~~(15)~~ is present at a side of the ~~write-once type second recording stack~~  $L_1$  recording layer (3) most remote from the entrance face ~~(8)~~.

11. (Currently Amended) A ~~The~~ dual-stack optical data storage medium as claimed in claim 10, wherein the second metal reflective layer ~~(15)~~ has a thickness  $d_{m1} \geq 25$  nm.

12. (Currently Amended) A ~~The~~ dual-stack optical data storage medium as claimed in claim 11, wherein  $d_{L1}$  is in the range of  $0 < d_{L1} \leq 3\lambda/4n_{L1}$ .

13. (Currently Amended) A ~~The~~ dual-stack optical data storage medium as claimed in claim 12, wherein a ~~third~~ transparent auxiliary layer I3 ~~(13)~~, having a refractive index  $n_{I3}$  and having a thickness  $d_{I3}$  in the range  $0 < d_{I3} \leq \lambda/n_{I3}$ , is present adjacent the write-once type  $L_1$  ~~second~~ recording layer ~~(3)~~ at a side of the write-once type  $L_1$  ~~second~~ recording layer closest to the entrance face ~~(8)~~.

14. (Currently Amended) A ~~The~~ dual-stack optical data storage medium as claimed in claim 11, wherein a third metal reflective layer ~~(17)~~, having a thickness  $d_{m3}$  in the range of  $0 < d_{m3} \leq 25$  nm, is present at a side of the write-once  $L_1$  ~~first~~ recording layer ~~(3)~~ closest to the entrance face ~~(8)~~ and  $d_{L1}$  is in the range of

$$0 < d_{L1} \leq 5\lambda/16n_{L1} \text{ or } 7\lambda/16n_{L1} \leq d_{L1} \leq \lambda/n_{L1}.$$

15. (Currently Amended) A The dual-stack optical data storage medium as claimed in claim 12 ~~or 14~~, wherein a ~~fourth~~ transparent auxiliary layer I4, having a refractive index  $n_{I4}$  and having a thickness  $d_{I4}$  in the range of  $0 < d_{I4} \leq 3\lambda/16n_{I4}$ , is present between the write-once ~~L<sub>1</sub>~~ first recording layer (3) and the second metal reflective layer ~~(15)~~.

16. (Currently Amended) A The dual-stack optical data storage medium as claimed in claim 13, wherein a ~~fourth~~ further transparent auxiliary layer I4, having a refractive index  $n_{I4}$  and having a thickness  $d_{I4}$  in the range of  $0 < d_{I4} \leq 3\lambda/16n_{I4}$ , is present between the write-once ~~L<sub>1</sub>~~ first recording layer (3) and the second metal reflective layer ~~(15)~~.

17. (Currently Amended) A The dual-stack optical data storage medium as claimed in claim 14 ~~or 15~~, wherein a ~~fifth~~ further transparent auxiliary layer I5, having a refractive index  $n_{I5}$  and having a thickness  $d_{I5}$  in the range of  $0 < d_{I5} \leq 3\lambda/16n_{I5}$ , is present

adjacent the third metal reflective layer ~~(17)~~ at a side of the third metal reflective layer closest to the entrance face ~~(8)~~.

18. (Currently Amended) A The dual-stack optical data storage medium as claimed in ~~any one claims 5, 6, 7, 8, 9, 13, 15, 16 or 17~~ claim 5, wherein at least one of the transparent auxiliary ~~layers~~ layer comprises a transparent heatsink material selected from the group of materials ITO, HfN and ALON.

19. (Currently Amended) A The dual-stack optical data storage medium as claimed in claim ~~1 or 2~~, wherein a guide groove ~~(G)~~ for L<sub>1</sub>-write-once type second recording layer is provided in the transparent spacer layer ~~(4)~~.

20. (Currently Amended) A The dual stack optical data storage medium as claimed in claim ~~1 or 2~~, wherein a guide groove (G) for L<sub>1</sub>-write-once type first recording layer is provided in the substrate ~~(1)~~.